

invention described in the subject application. This invention was in response to discoveries made by Applicants not disclosed in Hoffman '984 relating to adverse affects on bandwidth resulting from resonance effects of discharge rates and fan rotation rates at pulse repetition rates greater than 3,700 Hz and fan speeds greater than 3500 rpm.


Conclusion

For all the above reasons, Applicants' submit that as presently limited, Claim 1 should be allowable and the remaining outstanding claims should be allowable since they are dependent on and further limit an allowable claim. Therefore, Applicants submit that the outstanding claims, namely Claims 1-6 and 10-19 should be allowable and Applicants request that they be allowed and the above-identified application allowed to issue as a patent.

Marked Up Copy

Applicants have attached marked up copy of earlier versions of the claims showing changes made of the claims as now amended.

Respectfully submitted,


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VERSION WITH MARKINGS TO SHOW CHANGES MADE
For USSN 10/029,319

1. (Amended) An electric discharge laser apparatus including a tangential fan comprising:

- A) a laser chamber comprising:
 - 1) a laser gas,
 - 2) at least two longitudinal electrodes ~~configured~~ for producing to produce electric discharges defining a discharge region in said gas,
 - 3) a tangential fan for circulating said laser gas said fan defining a rotation axis and a circumference corresponding to a blade diameter of at least 5 inches, substantially concentric with said rotation axis and comprising a monolithic fan blade structure, said structure comprising:
 - a) a plurality of blade members, having non-uniform thickness and separated into at least 18 segments disposed in an approximate double helix pattern proximate to said circumference with the blade members in alternate segments being positioned approximately parallel to each other and at an acute angle with said rotation axis, said acute angle being approximately equal and opposite said acute angle of blade members in adjacent segments; and
 - b) a plurality of at least 17 hub members supporting said blade members and defining fan blade segments; said blade members being positioned to minimize adverse effects in said discharge region of reflection of discharge generated acoustic shock waves from said blade members, and

said blade members and said hub members being machined as a monolithic unit from a single block of material.

- B) a pulse power source for providing high voltage electrical pulses to said electrodes to produce electric discharges between said electrodes, at pulse rates of greater than 3,700 Hz, and
- C) one or more fan motors driving said fan at speeds of 3500 rpm or greater.